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AUTHOR Nimnicht, Glen P.
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INSTITUTION Far West Lab. for Educational Research and Development, Berkeley, Calif.
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ABSTRACT

A model responsive educational system being evolved by the Far West Laboratory is designed to serve children from ages 3 to 9. The major objectives of the educational system are to help children develop self-concept as it relates to learning in the school and the home, and to develop intellectual ability. An autotelic environment is stressed. The system integrates four component parts: (A) Head Start, (B) Follow Through, (C) Parent-Child Library, and (D) Day Care Program. Component E, the systems component, can stand alone or become a part of the total system. The timetable charts span 1966-76 and indicate the number of years involved in program development, training tasks, parent involvement activities, implementation in classrooms, evaluation for each component and for the total system. Feedback from the Head Start component has already provided enough information to permit this first revision of the basic plan and to reshape the tasks and objectives of subsequent phases. (WY)

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A REVISION OF THE BASIC PROGRAM

PLAN OF EDUCATION AT AGE THREE

Glen P. Nimnicht

THE PROBLEM

Formal education can and should start before a child is five or six. It does not, however, need to take place within a classroom. Formal education can happen in the home with one child or a small group of two to five children in a day care home with groups of fifteen or more children, in a Head Start or day care classroom, or in a public school. In contrast to informal education, formal education is a well-planned structured program of educational experiences that aid in the systematic development of a child's intellectual ability.

Underlying the program, Education Beginning at Age Three, is the basic assumption that the family has the responsibility for the education of their children. The role of any educational institution is to aid the family in carrying out this responsibility.

A second assumption is that any formal educational program should provide a variety of alternatives to meet the needs of the parents and their children. Some parents will want or need day-long, year-round day care service for their children; others will need three to five hours in a classroom setting; still others will need assistance in working with their children at home.

A third assumption is that the educational program should be responsive to the learner's background, culture, and life style. For example, if a child is Mexican-American and speaks Spanish, the educational program should respond by using materials that are relevant to his background and reflect his cultural heritage. The language of instruction should include

Spanish whether in a bilingual program or in a program in which English is treated as a second language.

These assumptions lead to one of the major objectives of the program: to help maintain and develop a pluralistic society. Instead of the "melting pot" objective of blending divergent groups into a single homogeneous mass, the objective should be to develop a "tossed salad" of different cultures and life styles, enhancing their values and uniqueness so that they become complementary. This is a profound change in objectives and is obviously based upon a value judgment. The logic is this:

(1) Minority groups have always resisted the efforts of the majority group to assimilate them. They have also resisted the educational system that tries to carry this out. This resistance, of course, limits the progress of minority children within the system and sets up conflicts within the children between the values of the family and their educational system.

(2) In some respects a pluralistic society is probably less efficient than a more homogeneous society. However, because different points of view provide a wider variety of alternatives to choose from in looking for problem solutions, it is probably much richer and more productive in the long run. In other words, the same logic can be applied to inter-disciplinary studies. Diversity can enrich rather than impoverish.

A program with a pluralistic society as an objective has two implications:

(1) the public schools will have to take into account what the children learn before they start school; and

(2) they will have to be more responsive to individual children and their parents.

The basic problem is that the schools are designed to serve students who hold the same values as the teachers. Either they are white, middle-class children or they emulate white, middle-class children. The schools respond to these children and nurture their development. This is evident in both procedures and content.

The procedures are built around the concept that all children at a given age are ready to learn the same thing (with some consideration given to inherited ability) and are motivated by the same factors. That is, such children will avoid failure, low marks, or retention in grade, and will work for success, high marks and praise from the teacher. Following this concept, most instruction takes place in front of groups of twenty-five or more students. The content is designed to be generally interesting to the average student and the major motivation is threat of failure or promise of success.

Head Start and Follow Through programs recognize that children from low-income homes need help. Within these national programs, efforts have been encouraged that either help a child to respond to the existing system or change the system to respond to the existing child. Nevertheless, there are too few examples of schools making concessions to children who are culturally different or who have different life styles. Some programs recognize that, since English is a second language for Spanish-speaking children, it should be taught from that point of view. Still few

experimental programs are concerned with developing bilingualism, and fewer still have any content that is relevant to the child's background. Perhaps the prime reason for this is that neither the parents nor the children themselves have had an effective voice in shaping their education.

The decisions about where to begin such a program and where to end it are arbitrary but necessary. Eventually such a program could affect the entire educational system, but it is obvious that some practical limits must be set to undertake a program of this scope. The range has been set from ages three to nine. Currently this encompasses the Head Start and Follow Through programs serving children from low-income homes and culturally and ethnically different children. But the program will be designed to serve all children. The Head Start and Follow Through programs were selected because their needs are the greatest and because improving educational opportunities for these children has been given a national priority.

THE MAJOR OBJECTIVES OF THE PROGRAM

The long range goal of the program is to develop a model responsive educational system that will serve at least 90% of the children from age three to at least age nine. The major objectives of the system will be to help children develop a healthy self-concept as it relates to learning in the school and the home, and to develop their intellectual ability. These two objectives are inter-related and cannot be treated as though they were independent of each other.

A HEALTHY SELF-CONCEPT

A child has a healthy self-concept in relationship to learning and school, if:

1. he likes himself and his people;

2. he believes that what he thinks, says and does makes a difference;
3. he believes that he can be successful in school;
4. he believes that he can solve a variety of problems;
5. he has a realistic estimate of his own abilities and limitations;
6. he expresses feelings of pleasure and enjoyment.

If nine- to ten-year old children have healthy self-images in relationship to learning and school, when compared with other children from a similar background, they will:

1. make better estimates of their ability to perform a given task;
2. make realistic statements about themselves and their racial, cultural, or ethnic group. Statements will be both positive and negative, but more positive than negative;
3. be more willing to take reasonable risks than failure when confronted with a problem they can probably solve;
4. after answering a question or offering a solution for a problem, they will make more realistic statements about the probability of being right or wrong;
5. express feelings or opinions more frequently, with fewer non-commital responses, fewer stereotypes, and a greater variety of responses to such questions as, "How do you feel about_____?" or "What do you think about_____?";
6. express themselves more freely in writing, painting or picture-drawing;
7. learn from erros and corrections rather than feeling put down or rejected;

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8. be able to express in verbal and non-verbal ways feelings of joy, happiness, fear and anger;
9. be able to use failure in a productive way;
10. take credit for accomplishments and failures;
11. be able to maximize the use of resources to solve problems;
12. be able to interact with other children and adults, i.e., the children will neither be aggressive or submissive in relationships with other children;
13. be able to work within limitations and make the most of the limited situation.

If the program is successful in producing a better environment to help children develop or maintain a healthy self-concept, children in the program will:

1. attend school more frequently;
2. be tardy less frequently;
3. say more positive things about the school, the teacher, and the things he is learning.

INTELLECTUAL DEVELOPMENT

A nine- or ten-year old child is developing his intellectual ability if he can solve a variety of problems, roughly classified as non-interactional, interactional, and affective. A non-interactional, physical, or one-person problem involves an individual who manipulates his physical environment, but is not manipulated by it in the same way. The results of a physical program are highly predictable. Solving puzzles is a good example of a non-interactional problem. In fact, intelligence tests are primarily a test of an individual's ability to solve puzzles. The present school curriculum deals mainly with this kind of problem-solving.

An interactional problem involves two or more people (or machines) and requires a person to think, "If I do this, what is he likely to do?" The individual is being manipulated at the same time he is manipulating. Games like bridge, poker, and chess are good examples; so is hide-and-seek. Interactional problems are not as predictable as non-interactional problems.

Finally, it is possible to think about these two kinds of problems and not consider emotional overtones, but emotion is usually involved to some degree. When the emotional aspects of the problem become the dominant consideration, the problem becomes affective. And, of course, the more affective it becomes, the more difficult it is to cope with the problem. An educational system must help children learn to cope with all three kinds of problems; for, in many instances, the learner cannot solve non-interactional or interactional problems until he has solved some affective problems.

To learn to solve a variety of non-interactional and interactional problems, the learner must develop:

(1) his senses and perceptions because the senses are the source of data for the thought process;

(2) his language ability because language is a tool of the thought process;

(3) his concept formation ability because he needs to be able to deal with abstractions and to classify information to organize thought.

Therefore, we can specify some intermediate aims that are related to the objective of problem-solving ability and are necessary prerequisites to developing a high order of problem-solving ability. But, the attainment of these ends does not mean that we have achieved our major objective. These aims are those that are currently measured by the typical school achievement

tests so we can state some intermediate criteria in terms of achievement test scores.

We will judge our program to have achieved a minimum level of success on some of the intermediate criteria if the children involved in the program for three or more years have achieved scores on tests of school-related skills at least six months higher than would be predicted for the present programs.

The limitation of this intermediate criterion is that it is restricted to the measures of skills related to reading, arithmetic and science. Since this is not our major criterion for success, and since we believe that a wide variation can exist in content, the specific tests to be used and the content to be measured will vary from school district to district according to current practices.

Another intermediate criterion will be the child's knowledge and understanding of his cultural background. Since the program serves a diversity of children, it is obvious that measures of success on this criterion will have to be developed for different children.

The major objective for intellectual development is the child's ability to learn how to learn. This is seen as giving the child the competence to sense and solve problems as well as the confidence to tackle them. When compared with other children from similar backgrounds, children who have been in the program two or three years will be better able to:

1. recognize, complete, extend, and discover patterns in one direction;
2. recognize, complete, extend, and discover patterns in two directions (matrix games).

3. recognize, extend and discover rules from examples (inductive thinking)
4. persevere, concentrate and succeed on problems involving the breaking of "set";
5. adapt to games involving rule changes;
6. eliminate what is known to determine what is unknown;
7. use feedback productively to modify actions;
8. solve verbal and mathematical puzzles;
9. seek a solution to one-person problems without assistance;
10. recognize that a problem cannot be solved with the information at hand;
11. anticipate the probable response of the other player in interactional games;
12. anticipate the probable response of others to alternative actions of the individual in some social situation;
13. cope with his own emotions--for example, exhibiting a healthy outlet for anger;
14. cope with emotions of other individuals.

Note again that these statements are not intended as a complete definition of problem-solving ability, but only as indicators. The task that remains to be done in both instances of measuring a child's self-concept and intellectual ability is to devise test situations or observational situations that will indicate how an individual compares to others on each item we have mentioned. Also, not that there is an obvious overlap between problem-solving that involves affective behavior and the measures of a healthy self-concept. This reinforces our notion that the

two major objectives are related and we can only be successful if we achieve both objectives.

PROCEDURES

To achieve the above objectives, the model program is based upon the idea of an environment that is designed to respond to the learner and in which all learning activities are autotelic.

The learning environment satisfies the following conditions:

a. it permits the learner to explore freely;

b. it informs the learner immediately about the consequences of his actions;

c. it is self-pacing, with events occurring at a rate determined by the learner;

d. it permits the learner to make full use of his capacity for discovering relations of various kinds;

e. its structure is such that the learner is likely to make a series of interconnected discoveries about the physical, cultural, or social world.

The activities within the environment are autotelic; that is, the activities are self-rewarding and do not depend upon rewards or punishments that are unrelated to the activity. But all activities that are self-rewarding are not necessarily autotelic. For a self-rewarding activity to be autotelic, it must help the learner develop a skill, learn a concept, or develop an attitude that is useful in some other activity. Autotelic activities are intentionally designed to reduce the rewards for success or the punishment for failure to tolerable limits for the learner and society, so that the learner can master some skill that is useful in life, but one which often

cannot be learned through direct experience since the cost of failure is too great to tolerate.

For example, in many of our autotelic activities, the only reward is the successful completion of the task, but the child may not be successful. Other activities are games in which one child wins and others do not, so there is a reward. The child knows he did not complete the task or he did not win, but he is not punished by not receiving a good grade or a token. Furthermore, if he cannot complete the task, he can leave it or if he does not win, he can stop playing or play with someone else. In any event, the child is protected from an overly anxious adult who might pressure him by withholding desirable extrinsic rewards or by threats of punishments. We believe that an essential element of any educational program for young children provides a way to avoid painful experiences that can effect future learning. The insistence upon using autotelic activities provides this protection.

APPLICATION OF THE PROCEDURES TO THE CLASSROOM

As the children enter the classroom in the morning, they are free to choose from a variety of activities such as painting, working puzzles, playing with manipulative toys, looking at books, listening to records or tapes, using the Language Master, and building with blocks. They can stay with an activity as long as they like or they can move on to something else whenever and as often as they like. As the day progresses, small groups play games (learning episodes) with the teacher or assistants and others ask to be read to. During the day, the teacher and assistants read to the children, play games with them and respond to the spontaneous activities which build the experience that precedes instruction in some skill or concept. The teacher and assistants

respond to the children rather than having the children respond to them. Adult-initiated conversation is limited, but child-initiated conversation is encouraged.

About fifteen or twenty minutes a day are devoted to large group activities such as singing, listening to a story, show and tell, or participating in a planned lesson. A child does not have to take part in large group activities if he does not want to, but he cannot continue in any activity that disturbs the group.

Once each day in kindergarten and first grade classes with learning booths a booth attendant asks a child if he would like to play with the typewriter. If the child says "yes," the attendant takes him to a booth equipped with an electric typewriter. The child begins by simply playing with the typewriter and the attendant tells him what he is doing. Whatever keys he strikes--"x" "a" "y" "comma" "space" or "return"--the attendant names. The child moves from this first free exploration phase through matching and discrimination to production of his own words and stories. At each phase, his discovery of the rules of the new phase (game) is stressed.

In the first and second grade programs being developed, the same general procedures will be followed; but the activities will change and there will be more small group activities and perhaps two or more large group activities a day. The children will still have large blocks of time for individual activities. While there probably will not be a block corner and dress-up area, there will be more educational games and toys related to math and science. There may be small reading or arithmetic groups or reading and math may be taught on an individual basis. The first and second grade children should still be free to choose their own activities and to opt out of large or small group work.

SOME BASIC CONSIDERATIONS IN DEVELOPING THE PROCEDURES AND CONTENT

The program is not based upon any single theory of learning because we do not think there is one theory that adequately accounts for all the ways children learn. However, there is some common agreement among various theories and the program is designed to satisfy the conditions for learning that are generally agreed upon. Different theoretical bases are used when they best explain a given approach.

The program is based upon the notion that there is a relationship between maturation and learning. A child does have to mature to a certain point before he can walk, and he does have to mature to a certain point before he can make certain sounds. The work of men likePiaget, Jerome Bruner, and J. McVicker Hunt is relevant. But the relationship between maturation and learning of certain skills or concepts is not nearly as clear as it seemed to be in the 30's and 40's. The supposed relationship should be subjected to empirical validation.

Although our program is based more heavily upon the ideas of developmental theorists, we also find the useful work of B.F. Skinner, Lloyd Homme, and others who are interested in the basic notions of operant conditioning. To try to define objectives in clear behavioral terms is useful, but we do not believe that every objective can be defined in behavior that can be immediately observed. To do so unnecessarily restricts our real objectives and results in superficial statements which do not reflect our real objectives. We also find it useful to think in terms of reinforcement of learning and feedback to the learner. We are using intrinsic reinforcers in autotelic activities instead of extrinsic reinforcers, but the reinforcers are present.

The notion that a wide variety of autotelic activities are necessary because no one activity is rewarding to all children is consistent with behaviorists' notion that a varied reward system is necessary to reinforce learning. They use tokens as reinforcers while we use a variety of learning activities.

While we develop learning sequences, we do not assume that every child must follow that sequence. In many instances, we do not claim to know how the learning of a particular behavior contributes to the future learning ability or achievement of a child. This has sometimes been described as a "sandpile theory of learning"; that is, we know that it takes a tremendous number of grains of sand to support more sand. But, we are not at all certain which grain of sand is necessary to support the next one. And, as the analogy implies, we are not certain that any particular grain is necessary--others could be substituted and still support the pile.

One example will illustrate the notion of sequencing and the "sand pile theory." In beginning a Head Start classroom, we advise the teacher to help the children learn a variety of concepts including color, size and shape. After the child has considerable experience with color, size and shapes, we start combining them into more complex concepts such as the largest circle or the green triangle, and eventually the smallest yellow square or the largest blue circle. We assume that the child can learn to deal with three attributes by first dealing with one attribute at a time, then two; but he does not necessarily have to follow this sequence of learning.

Another series of problems are posed by matrix games. In one such game, all of the shapes in the first row are red, in the second row green, third row blue, and the last row yellow. All shapes in the first column are circles, in the second squares, in the third triangles, and in the fourth rectangles. One of the cells in the matrix is covered and the child is asked

what shape is covered. To solve the problem, he must figure out the shape by looking at the column and its color by looking at the row. This is a fairly difficult problem for many four- or five-year-old children, yet it seems to be worth presenting. Except for helping the children learn to solve other matrix problems, it is difficult to say how it contributes to his future learning. We assume that it contributes to general problem-solving ability, but we do not assume that this or a similar experience is crucial to the future learning ability of the child.

The notion of the "sandpile theory" has many practical application. First, there is no sacred content that must be mastered at or by a given time. The child can opt out and not learn to count to ten in kindergarten--he can learn to count later. The emphasis is on learning how to learn--on the process rather than the specific content to be learned. We select content based upon four criteria:

1. Can we devise a way to help the child learn the concept without distorting its meaning?
2. Is the concept or skills of immediate value to the child?
3. Will the concept contribute to the child's ability to learn more complex concepts?
4. Does a concept fulfill expectations that teachers have at the next grade level?

A skill or concept does not have to meet all of the criteria, but the criteria helps to establish priorities or emphases that are placed on content. Nevertheless, we insist that all children not be expected to learn a set of skills or concepts at any given time.

SELECTION OF APPROACH

The selection of this model educational system for development was based upon basic considerations:

1. The model appears to correct some of the obvious defects in the present system by responding to the learner instead of asking the learner to respond to the system. The program:
   a. assumes that all children are not ready to learn the same thing at the same time;
   b. assumes that all children are not motivated by being rewarded with good grades or being punished with poor grades;
   c. recognizes differences in the cultural, ethnic, and racial backgrounds of children and responds to those differences;
   d. recognizes the need to involve parents in the decision-making process;
   e. uses procedures that are based upon solid psychological principles.
2. One component of the system--a model Head Start program--has been developed and tested prior to the Laboratory's selection of this approach and the initial evaluation indicated that the desired educational outcomes could be achieved.
3. By cooperating with other model testers and designers in the Head Start and Follow Through programs, the Laboratory has access to information on a variety of other approaches that will enable us to compare results and modify our system accordingly.

THE COMPONENTS OF THE SYSTEM

In order to accomplish the major objectives of developing a responsive educational program for children from age three to at least age nine, the development of five components has been undertaken. They are:

A. A model Head Start program for three- and four-year-old children.

B. A model Follow Through program for children from five to nine.

C. A Parent/Child Toy Library program for parents of children from three to nine.

D. A model Day Care program for children from three to nine.

E. The System Development component.

The strategy the Laboratory has followed has been to introduce one component at a time and develop each one on a fairly independent basis so that each component, with the exception of Component E, can stand alone or become a part of the total system. This means that each of the first four components has a set of objectives that are independent of the total system, but which must be accomplished if the majority of objectives of developing the system are to be accomplished.

The chart on the next page shows how the components have been or will be phased into the program. Components A, B, C, D have three primary objectives:

1. to develop a model program for children (or parents in Component C);

2. to develop a model inservice training program for teachers;

3. to establish and test the model program in a variety of situations.

The fifth component, E, has one major objective which is to combine the first four components into a system of education.

The logic for organizing the program into these particular components is based upon political rather than educational reasons. Currently the components

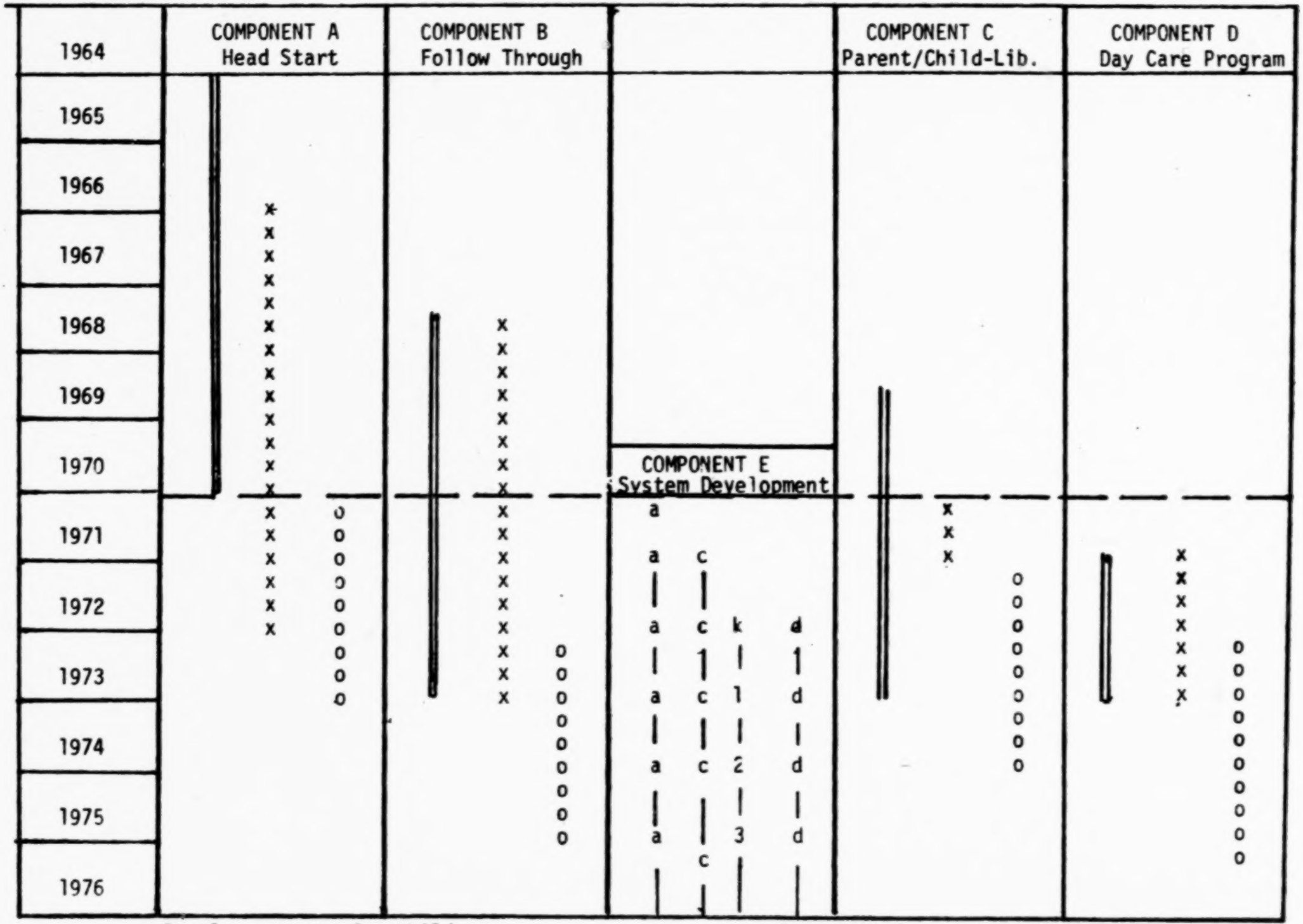
are consistent with the way existing systems are organized and the way people think about them. Educational programs for three- and four-year-old children, such as Head Start, are administered as special programs whether they are a part of the public schools or not. Kindergarten through the third grade is one part of the elementary school. The Parent/Child program can stand alone for parents of three- and four-year-old children or be a part of a Head Start program. It will become apparent under the discussion of the fourth component, Day Care, that the educational program will be the same as the Head Start program, but at the present time most people make a distinction between the two programs. Day Care usually starts with younger children and may extend to older children by providing after-school services and care. If each of these four components is to stand alone or fit into a system, it is important to recognize these distinctions even though they may not be logical distinctions from an educational point of view.

Component A, Head Start for three- and four-year-old children, was initiated in 1966 when the Laboratory, in cooperation with the New Nursery School in Greeley, Colorado, started to develop and test a training program for Head Start teachers and assistant teachers to enable them to carry out the responsive Head Start program for children that had been developed at the New Nursery School. Since then, the Laboratory has also been expanding and revising the model program for Head Start children.

On the chart this task is shown as completed at the end of 1970. It is complete only as far as the first cycle of development is concerned. Development work will continue throughout the life of the program.

The development of the training procedures for teachers is currently in the performance testing stage; that is, the procedures have successfully

STRATEGY TO ACCOMPLISH OUTCOMES



Develop program for children
Develop training for teachers and assistants
Implementation
Letters in Component E refer to other components

a - Component A
c - Component C
d - Component D

K - Kindergarten
1 - First Grade
2 - Second Grade
3 - Third Grade

completed a preliminary test and must go through an operational test before being released for general use. Since it will probably be necessary to recycle the testing and conduct a second performance test, the objectives of this component will not be accomplished until August, 1972. But the current training procedures are adequately developed to initiate Component E by starting to install the system beginning with Head Start classrooms in two (Fresno and San Francisco) and possibly three (Flint, Michigan) communities.

Component B, Follow Through for children in kindergarten through the third grade, was initiated in June, 1968. The development of the model program for the children and the inservice training program for the teachers and assistants are being developed and tested simultaneously. During the 1968-69 school year, the development started with kindergarten. This past year, 1969-70 the development was started in the first grade, and one grade level will be added each year.

The training program for kindergarten teachers was recycled through a second preliminary test this year, but based upon the experience the staff is gaining, it may be possible to omit the performance test for the teachers in the third grade. If this is possible, the objectives in this component could be achieved by 1974. But the development and testing at the kindergarten level will have reached the point that these procedures can be phased into Component E in September, 1971.

Component C is the Parent/Child Toy Library for parents of three- and four-year-old children. The general objectives are the same as the other components, but the focus is on working with parents rather than directly with children. The specific objectives are:

1. helping the child develop a positive self-image;
2. aiding the child's intellectual development, using toys and games designed to teach specific skills, concepts, or problem solving abilities;
3. aiding the child's intellectual abilities by improving the interaction between parents and children in aspects of cognitive development;
4. participating in the decision-making process that affects the education of their children.

This component was initiated in January, 1969. It has been through a preliminary test and the performance test will be completed by June, 1970. After a series of operational tests during the 1970-71 year, it should be ready for release for general use beginning in June, 1971. But by January, 1971, this component can be phased into the system testing.

Component D, the Day Care program for children from three to nine, has not been initiated. According to current plans, we will start in September, 1970 to develop a model center in cooperation with the Berkeley Public Schools. Since the primary effort will be simply to modify the procedure and products developed in Components A and C so that they can be applied in a different kind of administrative arrangement, the objectives of creating a deomonstration center for public-support centers should be accomplished by June, 1972.

Another objective of this component is to create a model for a business-supported day-care program. This should serve two purposes:

(a) provide the input to encourage business or industry to join in the model system that the Laboratory plans to test; and (b) provide business and industry in general with a model. The approach will be to use the Laboratory itself as a model in creating a day-care center for the children of the Laboratory's own staff. The financial arrangements would range from free day-care services for some female employees to a sliding fee basis for other staff members. This goal might be accomplished by the Laboratory alone or by cooperation with some local industrial firm. The plans are to initiate this part of the component in January, 1971, with a viable model ready for demonstration by June, 1972.

Component E, Systems Development, will be initiated in September, 1970, by starting the training of Head Start teachers and assistants. The Parent/Child program can be phased in starting in January, 1971, and the first phase of Follow Through (kindergarten) could start in September, 1971, Under the best of circumstances the earlier date for the achievement of the objectives of this component, which is the major program objective, would be August, 1975, but the probability that such a system can be successfully developed and tested before 1977 is not very high.

MAJOR TASKS TO BE PERFORMED

In order to develop such a system, the Laboratory will have to undertake five major tasks which apply to all of the components. The first major task is to develop materials and processes to enable the program to function in the classroom. For example, a variety of

educational toys and games are essential to provide a wide range of learning activities. Programmed material and simple machines are necessary to provide a broad source of activities that give the child immediate feedback. The Laboratory does not, however, intend to create an entirely new curriculum or set of instructional materials. The strategy is to evaluate existing materials and modify or supplement them only when necessary. In addition, we must develop learning units for teachers and their assistants to enable the teachers to use the materials and processes we are developing.

The second major task is to integrate the learning units into a cohesive training program. The teachers will receive both initial training and continuous training to maintain a high level of performance. New teachers entering the system will also be trained. Since this goal must be accomplished without the continuous involvement of the Laboratory's staff, the Laboratory strategy is to select individuals from a local community who can become trainers of teachers. We call these individuals Program Advisors (P.A.'s); the P.A. receives training from the Laboratory's staff and, in turn, trains ten teachers and ten assistant teachers.

The initial training for the teacher, conducted in their own classrooms, should last for two years to insure that at least 80% of the teachers reach a high level of performance. After the initial two years, the P.A.'s can maintain the program through continuous inservice training with 20 teachers and 20 assistants cycling the training on a yearly basis. The Laboratory will provide twelve weeks of training for the P.A.'s during the first two years and after that time, the Laboratory will continue to supply new training units and developments for the classroom. Except for a week-

long seminar at the beginning of each year, the P.A.'s will be responsible for the training of the teachers.

The third major task is to develop an effective program to enable parents to participate in the education of their children and to involve parents in the decision-making process. The strategy the Laboratory is following is to develop a course for parents built around the notion of showing parents how to use toys and games to help children learn some specific skill or concept. In the process, the parents learn some basic principles about child growth and development as well as ideas to help children develop a healthy self concept. The parents also learn how to be more effective in influencing the education of their children, such as ways of appealing a decision of a teacher or principal or ways of making a recommendation that is likely to be accepted. The second strategy is to form parent advisory groups to the Laboratory and in the communities.

The fourth major task is to install, maintain, and institutionalize the components of the system and finally the system itself into existing institutions. The strategy the Laboratory will follow is to install the component by surveying the existing institution, select points of intervention, monitor the progress and intervene in the system when necessary. Then the Laboratory will help maintain the program by acting as a catalyst--disseminating information about the program, encouraging the spread of the program, building support among participants in the parent system, and encouraging the necessary changes in the parent system to accomodate the new program as an integrated part of the system.

The fifth major task is to conduct a continuous evaluation of the system and all of its sub-parts--from determing whether a toy or game is

sufficiently interesting and effective to evaluating the total effect of the program on the behavior of children who have been involved.

The chart on the following page illustrates how the five major tasks apply to all of the components in the program. Except for the second major task, developing and testing the training system, four senior staff members are each responsible for one of the major tasks in all components of the program and they supervise the activities of the other staff members assigned to that task within the component. This assignment of staff by task rather than components provides a way for the activities or products developed in one component to be utilized in others. Each component is administered by a coordinator who is responsible for the coordination of the tasks wihin that component as well as relevant taks for the development and testing of the inservice system for teachers and assistants.

This program will produce a variety of products. The hard products that can be packaged and exported are detailed below. In addition, some soft products will be produced. For example, a model training program for teachers and assistants then is independent from the program for children. Another soft product is a study of the process used to introduce, establish, maintain, and institutionalize a model educational program in an ongoing institution. Because of the long-term aspect of the program, another product will be the training of large numbers of teachers and assistants as well as serving children. During the 1970-71 school year, between 9,500 and 10,000 children will be involved.

THE PROGRAM PRODUCTS

The products developed by this program will range from a single toy or game accompanied by one or more learning episodes which are brief

directions for use of the toy or game to help a child learn a specific skill or concept; to a complete model program for children up to age nine with clearly-specified procedures and charts of objectives and alternative objectives, when appropriate; to a complete training system to help teachers and assistants carry out such a program.

The following products should be ready for release by January, 1971:

1. Toys and games with learning episodes that describe how to use them and their objectives. Some of the toys can be used individually; others will be part of a set, and all of them will be part of the Educational Toy Library. Fifteen to twenty toys and games will be available at that time accompanied by 75 to 100 learning episodes.
2. An Educational Toy Library which will include the set of original toys and learning episodes referred to above, other commercial toys with learning episodes, slide/sound sets to demonstrate the use of ten of the toys, a card catalog system and an outline of a two-week training program for individuals who will conduct the course and operate the library.
3. A two-week training program for teacher-librarians who will conduct the course for parents and operate the toy library.
4. A book for parents on how to use the games and toys with their children.

The following products should be ready for release by August, 1972:

1. A model responsive educational program for three- and four-year-old children. The program will have a well-defined set of procedures and objectives.

COMPONENTS AND ACTIVITIES

MAJOR TASKS

Component	Development	Training System	Parent Involvement	Implementation	Evaluation
A	THE HEAD START COMPONENT ------- THREE AND FOUR YEAR CHILDREN				
B	THE FOLLOW THROUGH COMPONENT --- GRADES K, 1, 2, 3				
C	THE PARENT/CHILD-TOY LIBRARY COMPONENT				
D	THE DAY CARE COMPONENT ------- THREE TO NINE YEARS				
E	THE SYSTEM DEVELOPMENT COMPONENT				

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2. A training program for teachers and assistants to enable them to carry out the model program for children. The training program will consist of:

   a. Twelve weeks of training, over a two-year period of time, for Program Advisors by the Laboratory's staff. The Program Advisors will in turn train twenty people, ten teachers and ten assistants each year.

   b. Three twelve-week training units for the teachers. Each unit will consist of eight-week training units plus four weeks to recycle training based upon an evaluation of its effectiveness. The eight-week training units will consist of:

   (1) films of videotapes modeling desired behavior;

   (2) learning episodes to use as practice to develop skills of teachers in teaching specific skills or concepts and to use for learning some of the content of the program. After practicing a learning episode, the teacher will videotape herself using two or three episodes. This tape will be critiqued by the Program Advisor;

   (3) specific skills to practice for a week or two at a time to develop the teacher's ability to provide a good model for language development;

   (4) a series of units on such topics as classroom organization, classroom management and control, teacher-assistant relationships, parent participations, planning, evaluation, and observing children.

c. A similar model program for children in kindergarten and first grade.

By August, 1973, the program for children in the second and third grades and the training program for their teachers should be completed.

By August, 1977, the total system with all of its components should be ready for dissemination.

EVALUATION

The final evaluation of the program will be based upon how well it meets the objectives stated on pages 7 and 8. In the meantime, the various components of the program are being systematically evaluated. The Laboratory uses a systematic development process with four major steps--selection of approach and designing prototype; preliminary testing with a limited sample; performance testing with a larger sample but under careful supervision of the Laboratory; and, operational testing under normal field conditions with limited involvement of the Laboratory.

At any point the process can be recycled if the desired results are not obtained.

The development and testing of the model program for children and the training program for teachers and assistants are parallel developments. The first concern in evaluating the program is to determine how effective the training program is in producing the desired changes in teacher behavior. The primary techniques that are being used are periodic classroom observations by trained observers and audio and video recordings of classroom behavior of teachers.

After the teacher's performance is satisfactory, the second concern is to determine the effects upon the children. Does the changed teacher behavior significantly affect the growth of children toward the objectives of the program?

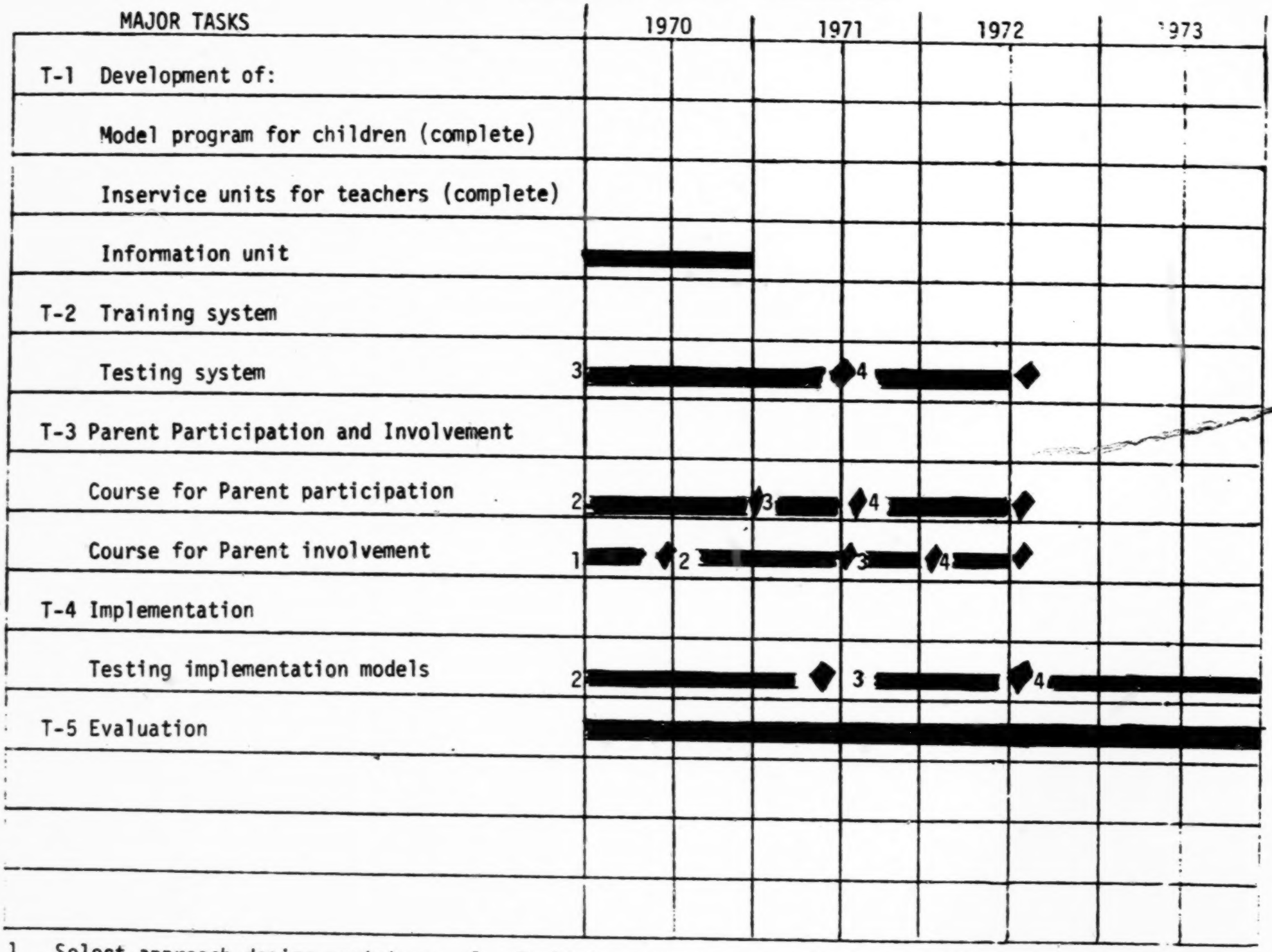
We have collected baseline data for evaluation of the children by using standardized tests of intelligence and achievement, but we do not consider these tests as adequate measures of the program; so we are developing a responsive achievement test to assess the children's achievement in intellectual development. The emphasis will obviously be on a child's problem-solving ability. We are currently devising situational tests and observational techniques to assess a nine- or ten-year-old child's behavior on the thirteen indicators of a positive self-image stated on pages 8 and 9. In the meantime, we are relying upon observations to make some estimate of a child's self-concept at earlier ages.

The Laboratory does not anticipate having a final evaluation of the first phase of the total program for at least four or five years, but in the developmental process there are enough check points to ensure against a complete failure. One thing seems to be certain, if the program does not meet our expectations, the alternatives are to revise the program until it does or replace it with a better model--we cannot return to current practices.

GPN/ck
August, 1970

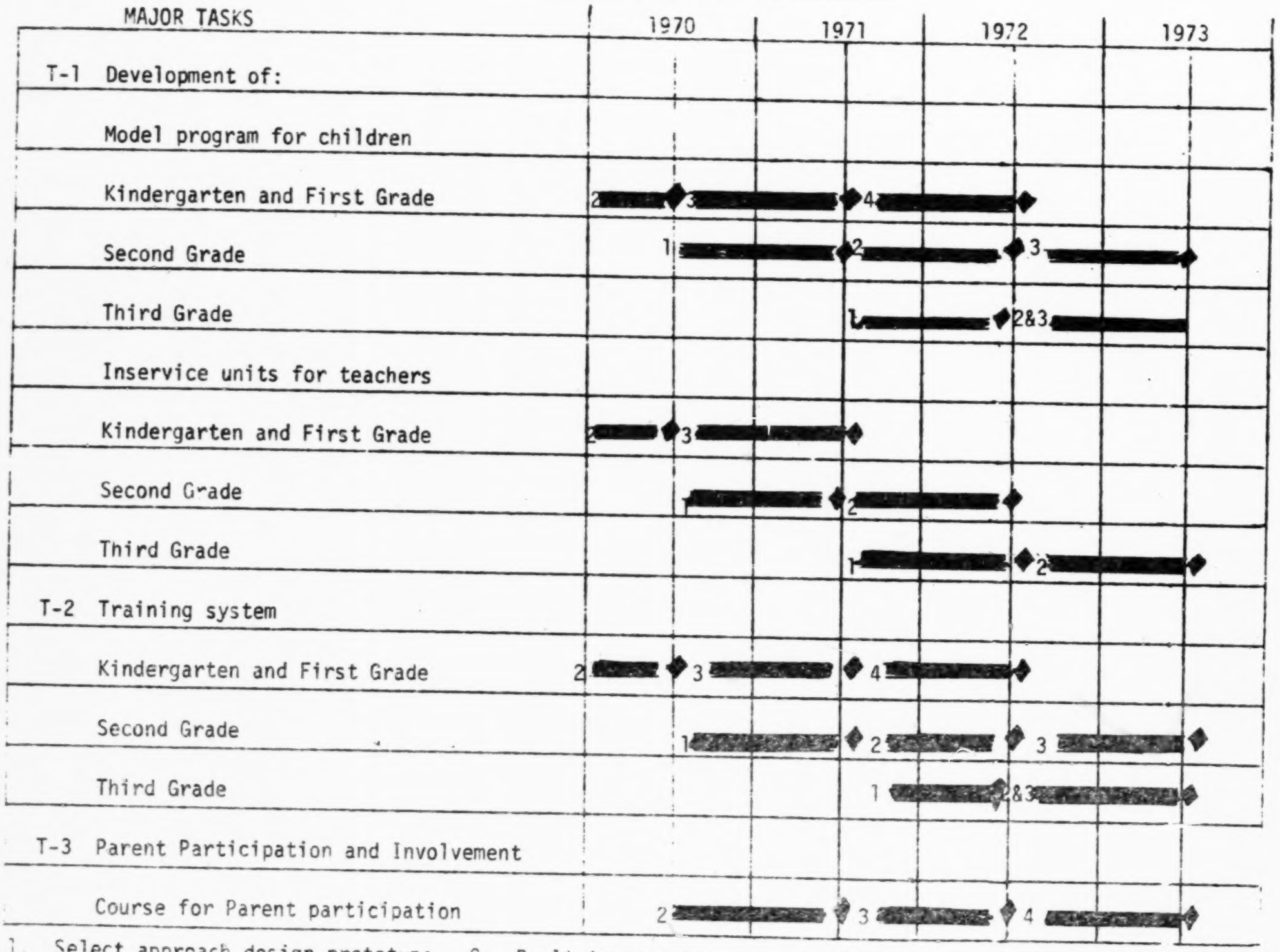
The following charts show the Work Plan by components.

COMPONENT: A Head Start



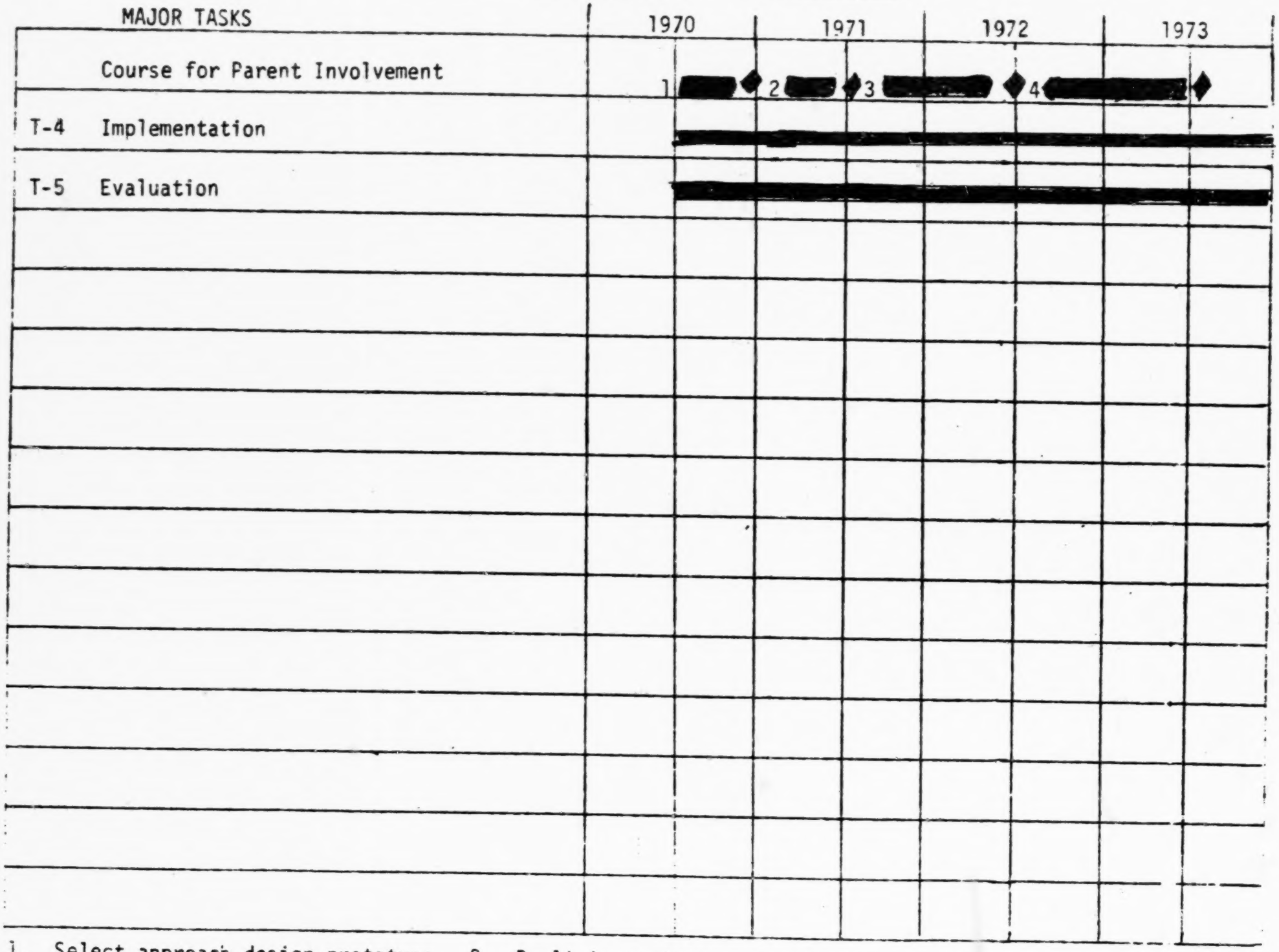
1. Select approach design prototype 2. Preliminary test 3. Performance test 4. Operational testing

COMPONENT: B Follow Through



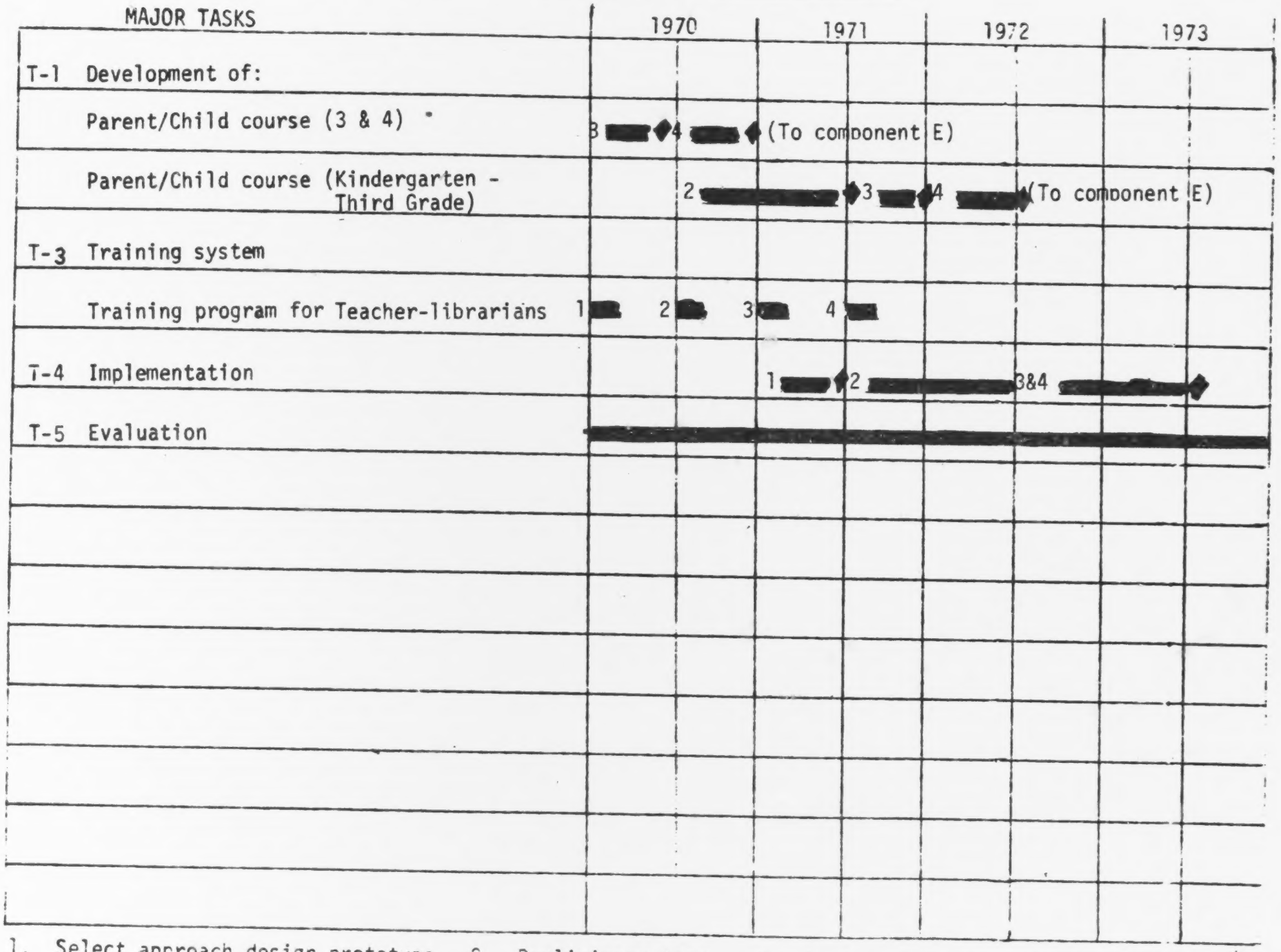
1. Select approach design prototype 2. Preliminary test 3. Performance test 4. Operational testing

COMPONENT: B Follow Through (continued)



1. Select approach design prototype 2. Preliminary test 3. Performance test 4. Operational testing

COMPONENT: C Parent/Child Toy Library



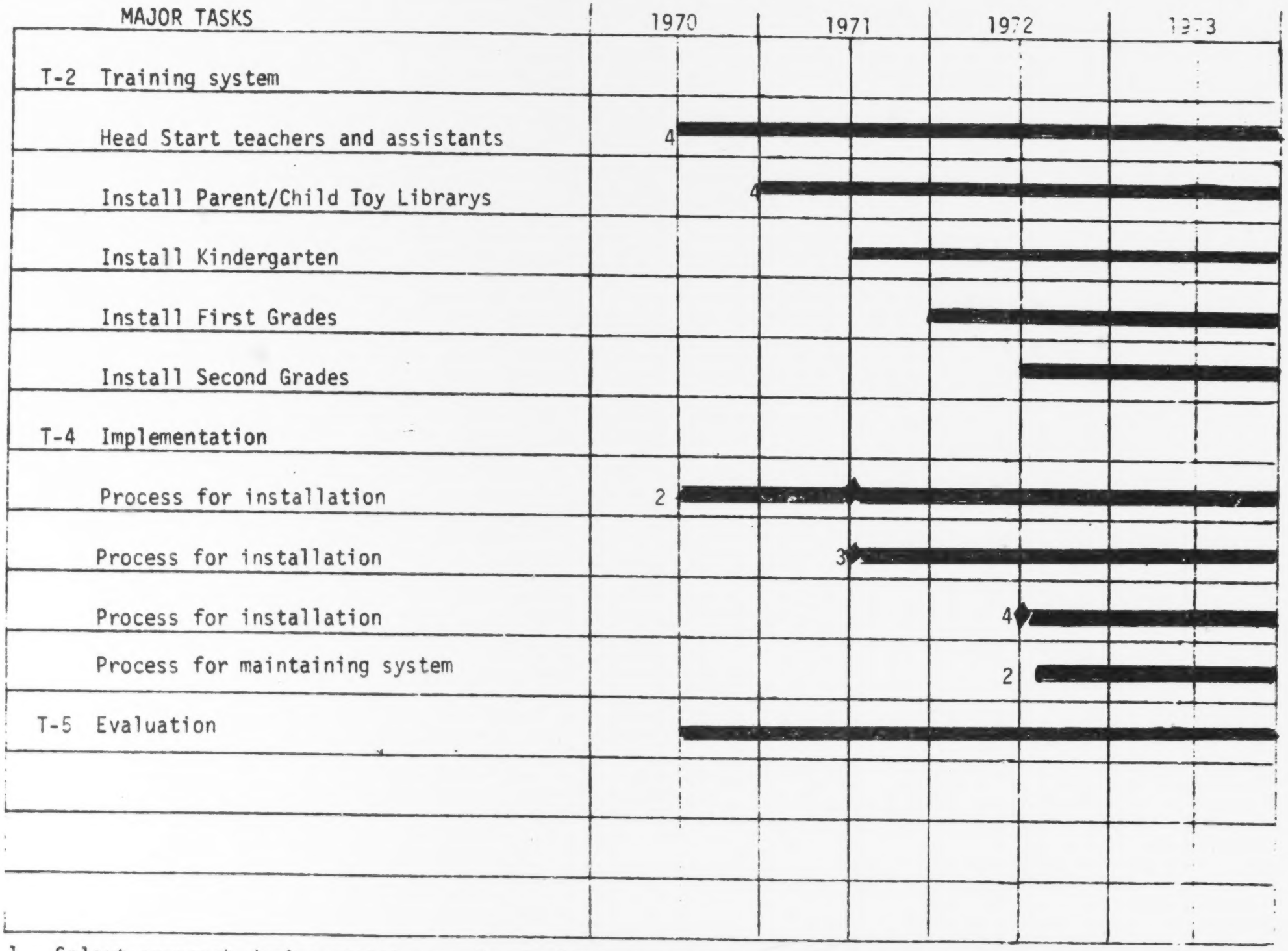
1. Select approach design prototype 2. Preliminary test 3. Performance test 4. Operational testing

COMPONENT: D Day Care

MAJOR TASKS	1970	1971	1972	1973
T-1 Development of:				
Modification of Head Start Program	2	3&4		
Developing model-demonstration center		2 3		
T-2 Training system				
Modification of training	2	3&4		
T-3 Implementation				
T-4 Evaluation				

1. Select approach design prototype 2. Preliminary test 3. Performance test 4. Operational testing

COMPONENT: E COMPONENT



1. Select approach design prototype 2. Preliminary test 3. Performance test 4. Operational testing

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